

Having, thus, described the invention, what is claimed is:

1 1. An apparatus for fixing the position of a metal end cap on a porous filter element,
2 the apparatus comprising:
3 a filter support mechanism for supporting a filter element;
4 a first inductive heater disposed at a first side of said filter element support
5 mechanism and being reciprocally movable with respect thereto; and
6 a drive system for selectively and reciprocally moving said first inductive heater
7 toward and away from said filter support mechanism.

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4 threading formed thereon, wherein each of said first and second heaters are threadably
5 connected to said control shaft.

1 5. The apparatus of claim 4, further comprising a motor, operatively connected to said
2 control shaft, for rotating said control shaft to move said inductive heaters in substantially
3 opposite directions.

1 6. An apparatus for fixing the position of metal end caps on a porous filter element,
2 the apparatus comprising:
3 a support structure comprising first and second side pillars and a boom
4 interconnecting the side pillars;
5 a control shaft disposed within said support structure and rotatably mounted thereto,
6 said control shaft having a first end with a right-hand threading formed thereon, and a second
7 end with a left-hand threading formed thereon;
8 a first inductive heater located in said first side pillar and movably supported on said
9 control shaft; and
10 a second inductive heater located in said second side pillar and movably supported on
11 said control shaft.

1 7. The apparatus of claim 6, further comprising a motor, operatively connected to said
2 control shaft, for rotating said control shaft to move said inductive heaters in substantially
3 opposite directions.

1 8. A method of forming a filter cartridge, comprising the steps of:

2 a) supporting a substantially cylindrical porous filter element at a central portion

3 thereof;

4 b) transferring the filter element to an end cap application station;

5 c) placing a pair of metal end caps, having an adhesive therein, on opposite ends of
6 said filter element;

7 d) transferring the filter element to an inductive heating station; and

8 e) heating the end caps, by inductive heating, thereby fixing the position of the end
9 caps on the filter element.

10 9. The method of claim 8, further comprising the steps of :

11 f) transferring the heater element, with attached end caps, to a final cure conveyor;

12 and

13 g) moving the heater element, on the final cure conveyor, through a final cure oven.

14 10. The method of claim 9, wherein said filter is rotated from a substantially
15 horizontal orientation to a substantially vertical orientation thereof during step f).

16 11. An apparatus for fixing the position of a metal end cap on a porous filter element,
17 the apparatus comprising:

18 a filter support apparatus for supporting a filter element, said filter support apparatus
19 being movable from a first station to a second station;

20 an emplacement applicator located at said first station for placing an end cap on an

6 end of a filter element held by said filter support apparatus;
7 a first inductive heater disposed at said second station and being reciprocally movable
8 with respect to said filter support apparatus; and
9 a heater moving device for selectively and reciprocally moving said first inductive
10 heater toward and away from said filter support apparatus at said second station.

1 12. The apparatus of claim 11, further comprising a second inductive heater at said
2 second station, and wherein said heater moving device is operable to move said first and
3 second inductive heaters simultaneously in opposite directions.

4 13. The apparatus of claim 1, wherein the filter support mechanism comprises a
5 gripper assembly which is movably mounted on a continuous loop chain conveyor.

6 14. The apparatus of claim 11, wherein the filter support mechanism comprises a
7 gripper assembly which is movably mounted on a continuous loop chain conveyor.